



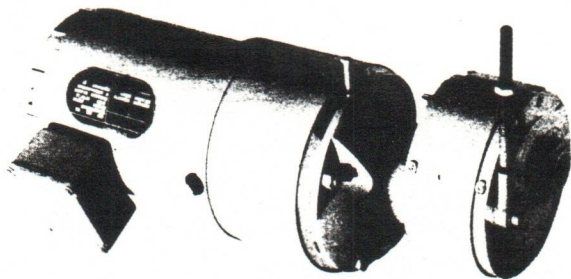
Acco Babcock Inc.
Material Handling Group

Issued 3-1-85
Supersedes 9-1-84

45-1

WORK-RATED[®]

SERIES 403 DUAL DRIVE UNITS FOR CRANES 1/2 and 1 HP



The economical, reliable, compact Series 403 enclosed dual drive crane units consists of two gear reducers, two in-line brakes, and two electric motors. Designed for normal industrial duty reversing applications, it is furnished with single speed or two speed motors.

Acco ACM control is used with single or two speed motors for smooth starts and excellent load control. The ACM is an all solid-state acceleration control module designed exclusively for crane and trolley traverse motion.

Series 403 dual drive crane units are self-contained and include in its many features an A.C. magnet actuated adjustable disc brake which reduces over-run. Fully enclosed motors make units adaptable for outdoor service.

CONSTRUCTION FEATURES

MOTOR: Standard NEMA Class B insulation, 30 minute duty motor is provided for standard commercial power supplies. The motor has standard NEMA shaft extension. The enclosed sealed ball bearing type is designed for normal industrial service.

REDUCER: Quiet, compact helical gearing is enclosed in an oil tight housing. All gears and pinions are made of heat treated alloy steel. All pinions are cut integral on the shaft. Precision antifriction bearings are used throughout. Cast iron housing is precision machined to accurate alignments.

A variety of mounting positions is made possible by the interchangeability of the fill, drain, and level plugs.

CONTROLS: Choose from single or two speed with ACM control. Controls are magnetic reversing type, mechanically and electrically interlocked with 115 volt control circuit. All wiring conforms to applicable NEC and CSA requirements.

Included are branch circuit fuses, mainline magnetic contactor, and transformer with fused secondary. Assembly is provided with ACM solid state control to adjust the starting torque and acceleration. NEMA type 3R enclosures are standard. Cover is lightweight, tough ABS material deep drawn for maximum control accessibility. Controls are supplied in separate enclosures.

MANUAL DISCONNECT SWITCH: Manually operated fused mainline disconnect with lock-out provision is available as optional equipment. Switch assembly is fusible, but furnished less fuses.

Warning: Equipment described herein is not designed for, and should not be used for, lifting, supporting, or transporting humans. Failure to comply with any one of the limitations noted herein can result in serious bodily injury and/or property damage.

HOW TO SPECIFY WORK-RATED DUAL DRIVE COMPONENTS TO BUILD SERIES 523 AND 533 MOTORIZED CRANES.

- Dual drive crane components are factory matched.** Do not mix with center drive components.
- Determine the type and capacity of crane and order appropriate single beam end truck.**
UNDERHUNG END TRUCKS should be selected if the crane and its load can be supported from the roof truss. See master catalog, Section 42, for underhung end trucks.
TOP RUNNING END TRUCKS should be selected if the crane and its load can be supported from the building column. See master catalog, Section 43, for top running end trucks.
- Determine desired crane speed and select appropriate reducer kit.**
125 FPM is considered approximate rate of a walking man. Single speed 125 FPM should be selected for long and unobstructed travel.
70 FPM single speed should be selected for travel in congested areas.
125/42 FPM two speed should be selected for long and obstructed travel.
70/23 FPM two speed should be selected for more load control in obstructed areas.

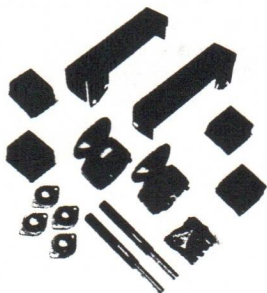
FOR UNDERHUNG CRANES



Product No.	Speed	Max HP @ 1800 RPM
4230040	70 FPM 17:1 Reduction	1/2
4230060	125 FPM 10:1 Reduction	3/4
4230050	125 FPM 10:1 Reduction	1

REDUCER KIT: Includes two motor reducers, one for each end truck, shaft key, and attaching hardware. Motor and rubber bumpers not included. Order by Product Number.

FOR TOP RUNNING CRANES



Product No.	Speed	Max HP @ 1800 RPM
4330010	70 FPM 17:1 Reduction	1/2
4330030	125 FPM 10:1 Reduction	3/4
4330020	125 FPM 10:1 Reduction	1

REDUCER KIT: Includes two motor reducers, one for each end truck, pinion shafts, spacer, and attaching hardware, 4 bumpers, and 2 gear covers. Motors not included. Order by Product Number.

- Determine required motor horsepower and select appropriate motor with brake kit.** Horsepower requirements may be determined two ways.

A. Selection of crane drive horsepower by using the table below.

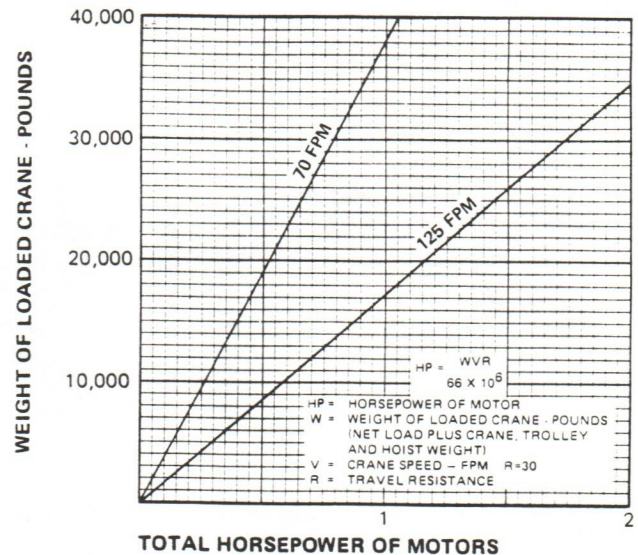
Crane Cap. (Tons)	Horsepower Req'd. for Travel (a)					
	70 FPM Spans to 60 ft.	125 FPM Span (ft)				
		10	20	30	40	50 60
1	1/2		1/2			
2	1/2		1/2			
3	1/2		1/2			
4	1/2		1/2			3/4
5	1/2		1/2		3/4	
6	1/2		1/2		3/4	
7-1/2	1/2		3/4			1
10	1/2		3/4			1

To find necessary horsepower for drive unit when capacity of crane and desired speed are known:

Find the correct capacity and speed. Their intersection indicates necessary horsepower.

(a) The HP shown is for each motor; two required per crane.

B. Selection of Crane Drive Unit by using graph.



To find necessary horsepower for drive unit when total weight of crane and desired speed are known:

Find the correct weight on vertical scale. Project a line from this point until it intersects the proper speed line. From this point of intersection, project a line down to the horizontal scale which indicates necessary horsepower.

To find maximum allowable load, reverse procedure above, beginning at the horizontal scale and reading the answer on the vertical scale.

NOTE: Load values for given speeds and horsepower apply to cranes on level, parallel, aligned runways and must not be exceeded. Consequently, when necessary horsepower is between two standard motors, select the larger. Shaft speeds based on 1800 rpm motor.



MOTOR WITH BRAKE KIT

includes two 230/460v, 3-phase, 60hz., motors with brakes. Kits for 200 and 575 volts are available on application. Horsepower applies to each motor. Order by product number.

- 4030010 For (2) Single Speed Motors with Brakes 1/2 hp @ 1800 rpm
- 4030130 For (2) Single Speed Motors with Brakes 3/4 hp @ 1800 rpm
- 4030020 For (2) Single Speed Motors with Brakes 1 hp @ 1800 rpm
- 4030030 For (2) Two Speed Motors with Brakes 1/2 - 1/6 hp @ 1800/600 rpm
- 4030140 For (2) Two Speed Motors with Brakes 3/4 - 1/4 hp @ 1800/600 rpm
- 4030040 For (2) Two Speed Motors with Brakes 1 - 1/3 hp @ 1800/600 rpm



WORK-RATED SERIES 403 DUAL DRIVE UNITS FOR CRANES

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**1/2 and 1
HP**

5. Select available dual drive control kit.

Control kit includes reversing contactor with control transformer (115v control standard) crane motor circuit fuses, magnetic main line contactor and ACM (Acceleration Control Module). Push button station not included. Order by product number. Specify 230 or 460 voltage.



12"H x 36"L
x 7 1/2"D

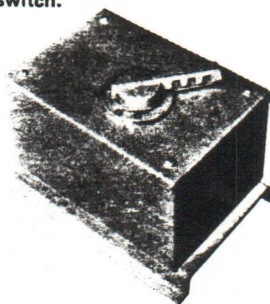
- 4030050 Single speed control kit with size one mainline contactor. For power supplies other than 230 or 460 volts. (specify exact voltage and total bridge H.P.)
- 4030060 Single speed control kit with size two mainline contactor. For power supplies other than 230 or 460 volts. (specify exact voltage and total bridge H.P.)
- 4030070 Two speed control kit with size one mainline contactor. For all power supplies. (specify voltage and total bridge H.P.)
- 4030080 Two speed control kit with size two mainline contactor. For all power supplies. (specify voltage and total bridge H.P.)
- 4030090 Single speed control kit with size one mainline contactor. For 230 volts with max. bridge H.P. of 3 H.P. (specify exact bridge H.P.)
- 4030100 Single speed control kit with size one mainline contactor. For 460 volts with max. bridge H.P. of 5 H.P. (specify exact bridge H.P.)
- 4030110 Single speed control kit with size two mainline contactor. For 230 volts with max. bridge H.P. of 3 H.P. (specify exact bridge H.P.)
- 4030120 Single speed control kit with size two mainline contactor. For 460 volts with max. bridge H.P. of 5 H.P. (specify exact bridge H.P.)

Determine contactor size required from chart below.

Size	Volts	Maximum H.P.	
		One Motor	All Motors
1	200 - 240	7.5	10
	440 - 600	10	20
2	200 - 240	20	30
	440 - 600	40	60

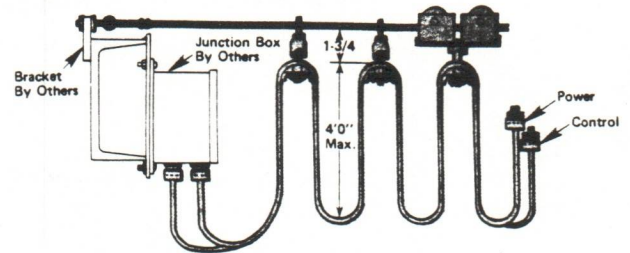
6. Select applicable manual disconnect switch.

6400050	For 30 Amp 600v
6400060	For 60 Amp 600v



Manual disconnect switch assembly is fusible, but furnished less fuses. Capacity of manual disconnect switch determined by fuse size required by National Electrical Code 430-62. (Allowable fuse size of largest motor, based on NEC table 430-152, plus sum of full load currents of the other motors.) If ampacity of manual disconnect switch is not specified, Acco will supply 60 amp, 600v switch. Fuses of 30 amp or less will require adapters to fit 60 amp clips. Fuses and reducers not supplied. Order by product number.

7. Specify flat wire festoon tagline electrification.



The wire supported festoon tagline kit is designed for electrical supply on runways or crane bridges up to 60 foot spans. Operating on a galvanized wire rope, the eyebolt supported trolleys may be used in outdoor applications.

The kit contains the following:

- Flat wire cable or cables with
- Cord grips
- Trolleys
- Eyebolt with nuts
- Cable clamps
- Wire rope

Product Number	Power		Control (a) No. of Conductors
	No. of Conductors	Max. Amps	
6400010	4	32	—
6400020	4	75	—
6400030	4	32	8
6400040	4	75	8

(a) A 12 wire control conductor cable is available on application.

To order specify product number, length of span, and total combined horsepower to be electrified by the kit.

8. Select desired Acco hoist along with bridge and runway electrification conductor and collector system.

FOR HOIST see master catalog sections

10 for "Hand operated Hoist", 1/2 to 10 tons

20 for "WRIGHT-WAY Electric Hoist", 1/4 to 2 ton

30 for "WORK-RATED Hoist", 1 to 20 tons.

WARNING: Only competent fabrication personnel familiar with standard fabrication practices should be employed to assemble these cranes because of the necessity of properly interpreting these instructions and for the purposes of determining appropriate compatible equipment and product applications. Acco disclaims any responsibility for the quality of workmanship employed in the fabrication of a crane according to these instructions or the sufficiency of the system in which and to which this system or equipment is to be installed or the sufficiency of the system to sustain any particular load that may be imposed upon it. Contact the Material Handling Group of Acco Babcock Inc. at 1110 East Princess Street, York, Pennsylvania 17403 for additional information if necessary.

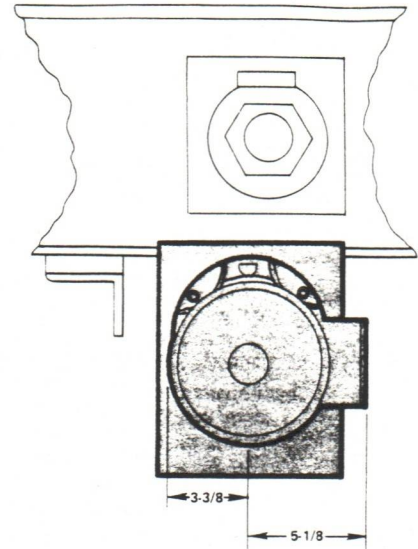
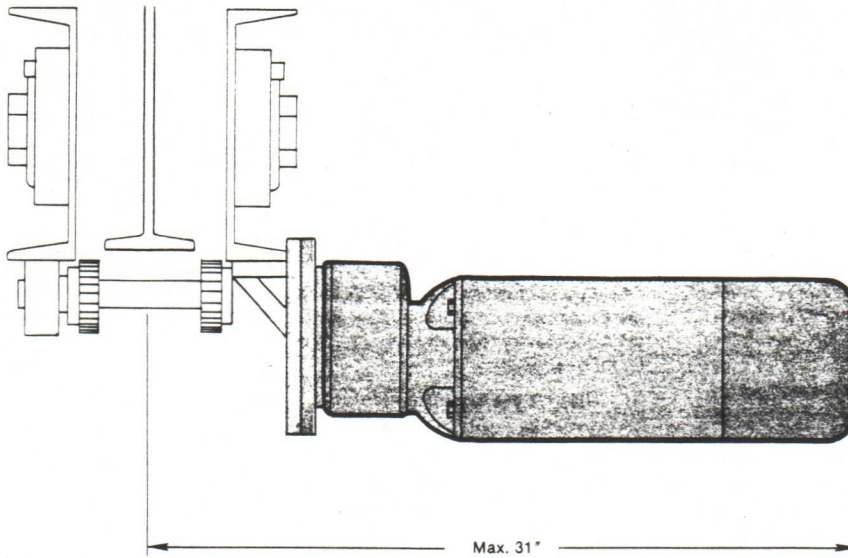
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**1/2 and 1
HP**

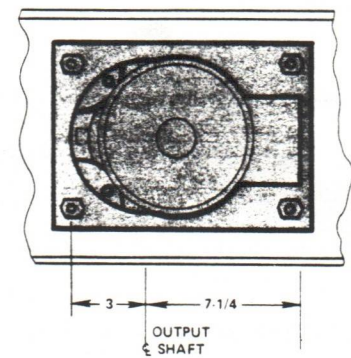
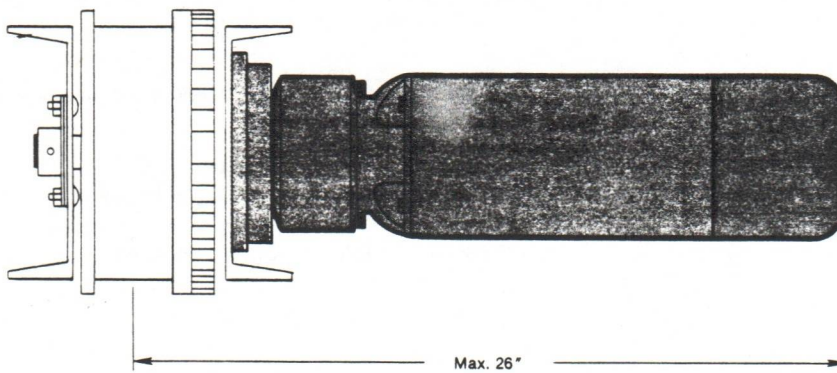
**WORK-RATED SERIES 403 DUAL DRIVE UNITS
FOR CRANES**

45-4

UNDERHUNG DRIVE UNIT



TOP RUNNING DRIVE UNIT



All dimensions shown in inches.



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A Babcock International company

Material Handling Group

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